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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/886,320	06/21/2001	Arjun Selvakumar	IO-1016-US	5384

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EXAMINER

SAINT SURIN, JACQUES M

ART UNIT PAPER NUMBER

2856

DATE MAILED: 04/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/886,320

Applicant(s)

SELVAKUMAR ET AL.

Examiner

Jacques M Saint-Surin

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-43 and 48-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-37 and 48-56 is/are allowed.
- 6) ☒ Claim(s) 38-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

### DETAILED ACTION

1. Applicant's election without traverse of Group I, claims 1-43 and 48-56 in Paper No. 12 is acknowledged.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 38-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Devolk et al. (US Patent 5,852,242).

Regarding claim 38, Devolk et al. ('242) discloses a method of operating an accelerometer (sensor 10) having a measurement mass (16) positioned within a housing including top and bottom electrodes (12 and 14) positioned between corresponding top and bottom capacitor electrodes (22 and 24) (Sensor assembly 10 has a body including a top cover (or cap) 12, a bottom cover (or cap) 14, a central (or proof) mass 16 between top cover 12 and bottom cover 14, and a generally rectangular frame 18 receiving such central mass 16 therein between covers 12 and 14, comprising: resiliently coupling the measurement mass (springs 32, 34 are deformed linearly with input force applied perpendicular to the top and bottom surfaces of mass 16, see: col. 5, lines 28-30 to the housing (18) using a resilient folded beam (springs 32, 34).

Regarding claim 39, Devolk et al. ('242) discloses the small gaps cause a corresponding frame edge or mass edge or adjacent spring to act as a stop to prevent the spring leg from moving a distance greater than the yield point of the spring material, see: col. 6, lines 61-64).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Devolk et al. (US Patent 5,852,242)

Claim 42 differs from Devolk et al. by reciting a resilient straight beam. Note that Devolk et al. discloses a spring member having L-shaped. It would have been an obvious matter of design choice to modify the L-shaped of Devolk in order to utilize a

a resilient straight beam or any other resilient shaped-type since applicant has not disclosed that the straight beam solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the L-shaped of Devolk.

Regarding claim 43, as discussed above, it is rejected for the reasons set forth for claim 39.

6. Claims 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Devolk et al. (US Patent 5,852,242) in view of Bergstrom et al. (US Patent 5,412,987).

Claim 40 differs from Devolk et al. by reciting a resilient S-shaped beam. Bergstrom et al. ('987) discloses as the magnitude of the acceleration force increases, the limbs resiliently deform to assume a definite S-shape, as represented in Figs 5 and 6, see: col. 2, lines 50-53. It would have been an obvious matter of design choice to modify Devolk in order to utilize the techniques of Bergstrom because it provide a cantilever beam having a proof mass causing to resiliently deform into an S-shape when the accelerometer is subjected to acceleration intended to be detected and thereby making the above combination more effective and reliable.

Regarding claim 41, as discussed above, it is rejected for the reasons set forth for claim 39.

***Allowable Subject Matter***

7. Claims 1-37 and 48-56 are allowable over the prior art of record.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hanson (US Patent 5,095,749) discloses proofmass suspension assembly for accelerometers.

Hulsing, II (US Patent 5,331,853) discloses a micromachined rated and acceleration sensor.

Zarabadi et al. (US Patent 6,393,914) discloses an angular accelerometer.

Beckman (US Patent 3,884,085) discloses an accelerometer assembly.

Reidemeister et al. (US Patent 5,345,823) discloses accelerometer.


Dupuie et al. (US Patent 6,035,694) discloses a method and apparatus for calibration of stray capacitance mismatch in a closed loop electro-mechanical accelerometer.


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques M Saint-Surin whose telephone number is (703) 308-3698. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Art Unit: 2856

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

  
Jacques M. Saint-Surin  
April 2, 2003

  
HEZRON WILLIAMS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800